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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,476	06/11/2001	John Hrinevich JR.	DP-304233	2000

7590 10/07/2003

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EXAMINER
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WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/878,476

Applicant(s)

HRINEVICH ET AL.

Examiner

Wills M Monique

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-5 & 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms are of uncertain meaning rendering the claims vague and indefinite.

The terms "large length-to-diameter ratio" and "low-density" in claims 4 & 11 are relative terms which render the claims indefinite. The terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how large the length-to-diameter ratio has to be. It is also unclear as to how low the density of the fibers has to be.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 & 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Timmons et al. U.S. Patent 6,316,148.

Timmons teaches two layers of matrix material outer layers 14 with an inner layer substrate 12 that serves as both a structural element and current collect. The substrate may be made of multiple fibers of aluminum, aluminum alloy, copper, copper alloys, nickel, nick alloys or non-metallic materials such as graphite, carbon fibers and conductive plastics (col. 2, lines 15-25). The substrate is expanded into a structural element having a thickness between 0.001 to 0.020 inches (col. 3, lines 1-14). The substrate 12 is encapsulated between a pair of outer layers of lead or lead alloy foil as corrosion protection for the substrate (col. 3, lines 14-20). The thickness of the outer layers is about 0.005 inches thick (col. 3, lines 30-35). The three layers are pack-bonded by cold rolling the outer and inner layers as effective means of completely encapsulating the substrate (col. 4, lines 25-30). The substrate is uniformly dispersed

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upon a surface of the lead alloy material (col. 3, lines 15-30). The fibers of the substrate inherently possess large length-to-diameter ratios and low-density fibers. Further, the lead alloy and substrate material inherently provide predetermined surface properties.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-8 & 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timmons et al. U.S. Patent 6,316,148.

Timmons teaches a pack-bonded composite as described herein above. The reference also teaches that the top and bottom layers are 0.005 inches and the middle substrate ranges from 0.001 to 0.002 inches (col. 3, lines 5-35). The top and bottom layers provide predetermined surface properties (col. 3, lines 50-60).

Timmons does not expressly disclose providing three layers of matrix material and two layers of reinforcement material.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ additional matrix and reinforcement layers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timmons et al. U.S. Patent 6,316,148 in view of Hoshihara et al. U.S. Patent 4,906,540.

Timmons teaches a pack-bonded composite as described herein above including cold rolling the layers to form a pack bonded composite. The resulting material is cut to make individual current collectors (col. 4, lines 30-35).

The reference is silent to interleaving continuous films during the cold rolling process.

Hoshihara teaches that it is conventional to employ continuous film during roll-bonding to make lead current collectors (Fig. 1 and col. 1, lines 10-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the continuous films of Hoshihara during the cold rolling process of Timmons, in order to mass produce multiple current collectors. The skilled artisan recognizes that employing continuous film is an expeditious way to produce multiple current collectors, as evidenced by Hoshihara.

**Conclusions**

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

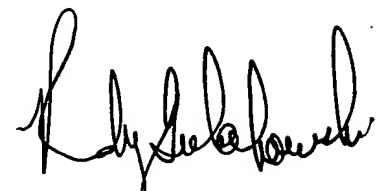
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 703-308-4333.

The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

09/20/03



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